IBM Solution Developer Program

IBM

Building e-business applications:

A solution developer's guide to e-business

e-business

The next generation of business has arrived

The opportunities e-business presents to software developers are tremendous. You'd like to take full advantage of these opportunities and increase your market share. And IBM® can help—by providing foundations for rich, Web-based applications that integrate with your customers' multivendor environments.

IBM has helped thousands of businesses transform into e-businesses. These transformations vary in complexity—some businesses merely extend their existing applications to the Web. Others add more advanced features, like applications that integrate tightly with back-end systems.

e-business: Ready or not?

As we've worked with customers to develop and deploy their e-business solutions, we've learned a number of valuable lessons. You can draw from what we've learned to help your customers capitalize on e-business:

1) *e-business solutions are created by* ***connecting and integrating*** *business processes, information and people. e-business solutions reflect the style of the Internet and the World Wide Web.*
   - They are built from existing assets.
   - New function can be added quickly—as long as it's based on standards.

2) *e-business solutions continue to* ***evolve*** *over time.*
   - New devices can be supported—on a plug-and-play basis.
   - Information can be leveraged to continuously improve the user experience.

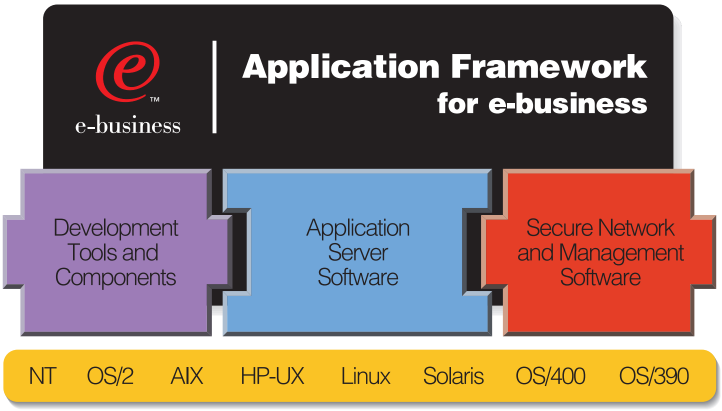
3) *e-business solutions must* ***grow*** *quickly in multiple dimensions.*
   - They must support many new users, even if they appear overnight.
   - They must handle frequent changes and additions to content and creative design.

4) *Finally, e-business solutions must* ***work.*** *They must offer:*
   - Reliability that builds trust.
   - Security that builds confidence.
   - Manageability that ensures performance.

The Application Framework for e-business

We've taken our e-business experience and developed a proven methodology for building e-business applications that is based on cross-platform technologies and open industry standards—the Application Framework for e-business (the Framework). The Framework is a productive environment that will let you leverage your existing skills to deliver a new generation of scalable, robust Web applications that can be managed and migrated as needs change. The Framework allows you to use your choice of tools and middleware, regardless of the vendor, to build applications that can run on all IBM supported operating systems, including Windows NT® and Linux. With the Framework, you can write applications on the operating system of your choice, and test and deploy on the operating system of your customer's choice.

The Framework is based on industry standards including Java™ technology, XML and CORBA. Java technology's portability combined with the range of Framework platform and service options allows unprecedented scale and deployment flexibility. For example, as your customer's needs change, applications based on the Framework design principle and initially deployed on a single NT server can be moved up to multiple UNIX® servers, and then moved to a high-end S/390®—without redesign or recoding. The Framework provides a model for high-output programming, while reducing the complexity and skill requirements for developing e-business applications. Since leading IT providers support Java technology, your customers' and your investments in skill development and applications are protected.

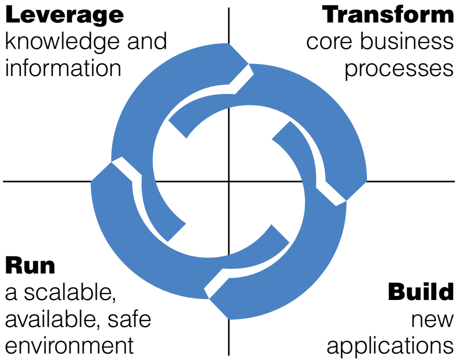

e-business
Application Framework
for e-business
Development Tools and Components
Application Server Software
Secure Network and Management Software
NT
OS/2
AIX
HP-UX
Linux
Solaris
OS/400
OS/390

The e-business cycle

We've worked with countless businesses to help them take the fast path to e-business. And in the process, we've observed a cycle. The e-business cycle is the process that companies go through as they transform themselves from regular business to e-business. There are four phases to the e-business cycle: transforming core business processes through the use of Internet technologies; running a scalable, available and secure environment; leveraging of knowledge and information gained through e-business systems; and building flexible, expandable e-business solutions.

Customers can start on the path to e-business in any of these phases and execute more than one phase at a time. As a developer, you will want to recognize and seek out organizations that need your applications and tools to help transform a core business process or build a new application.

The e-business cycle



Building successful e-business applications

The component-based Framework methodology allows you to build solutions that are not only scalable, but also stable and portable. And since Framework applications are modular and server-centric, they're easy to deploy and modify.

To meet your customers' needs, consider:

- Building applications that are standards-based. Standards make it easier to deal with all the elements you can't control. By using multiplatform, multivendor standards like Java technology, CORBA and XML, you can support all clients equally. Your application will be able to integrate with information and data that lives on multiple platforms, to maximize your deployment flexibility.
- Building applications that are server-centric. Instead of putting logic at the client and the server, put the majority of logic on the server so an application can be updated in one place—cutting maintenance and deployment time to a fraction of what was required historically.
- Building applications that leverage your customer's core systems and information. Application development extends your existing investment: the business logic, the code and the systems.

- Building applications that are scalable. You can build applications that can handle unpredictable demands that may not exist for days or months, or that might exist from day one. This way, customers won't have to worry about whether their Web-based application can handle increases in traffic since it can be easily ported to a more robust server.
- Building applications that are quick to deploy and improve productivity. Reusing customers' existing code will speed your development and deployment and will reduce the time they need to devote to retraining.
- Building applications that are manageable so your customers' technical staff aren't overburdened with an extremely complex application and IT environment. Applications must be easy to manage to ensure system continuity and availability.

Choosing an application model

To deploy successful e-business applications, the application model you choose matters.

Client/Server Extended Model—This model revolutionized the IT industry. Its strength was a tightly integrated client and server environment that made new application development easier. But as businesses extend this familiar model into the networked world, they are finding that its strength is also its weakness. This model requires homogeneity. It favors a single client type and requires simultaneous deployment of both the client and server. Additionally, it has configuration dependencies, and deployment options are limited.

The Application Framework for e-business Model—This model adds the flexibility and responsiveness missing from traditional client/server. It is designed for the heterogeneous world of e-business. By using multiplatform, multivendor standards, the Application Framework for e-business ensures that application services and data can be anywhere, that applications can support all types of clients and that the applications can be built independent of the deployment platform. It was created to extend your customers' existing investments in applications, systems, data and skills.

The engines of e-business

In the transaction-based world of e-business, the choice of servers is critical. IBM offers a powerful family of servers for e-business.

Netfinity®—These Intel® processor-based servers are establishing some of the most impressive numbers for reliability and availability in the Windows NT environment.

RS/6000®—IBM's ultrascalable UNIX platform powers some of the most successful new e-business sites.

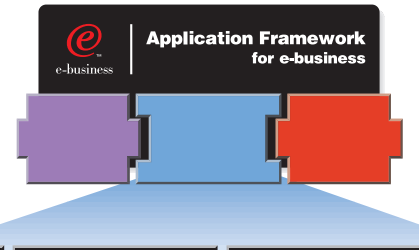
AS/400®—The AS/400's bulletproof security, broad scalability and 64-bit technology have positioned it to be a true engine of e-business.

S/390—Our latest S/390, the G5 Enterprise Server, provides business with the closest thing to continuous computing.

Application server software

Our leading Web and database application server software lets you build e-business applications that combine collaboration, search, database and transaction features. You'll be able to create robust Web-based solutions that deliver a higher degree of personalized service and attention at every stage of your customer's transaction cycle, even as the transaction scope and volume multiplies. It also allows you to leverage your customer's existing IT systems, reducing deployment complexity.

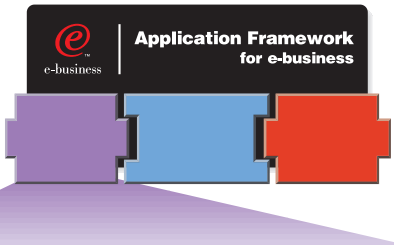
We also integrated e-business clients and application servers into the IBM Suites for e-business, which make it easy to build, deploy and manage e-business applications across popular platforms.



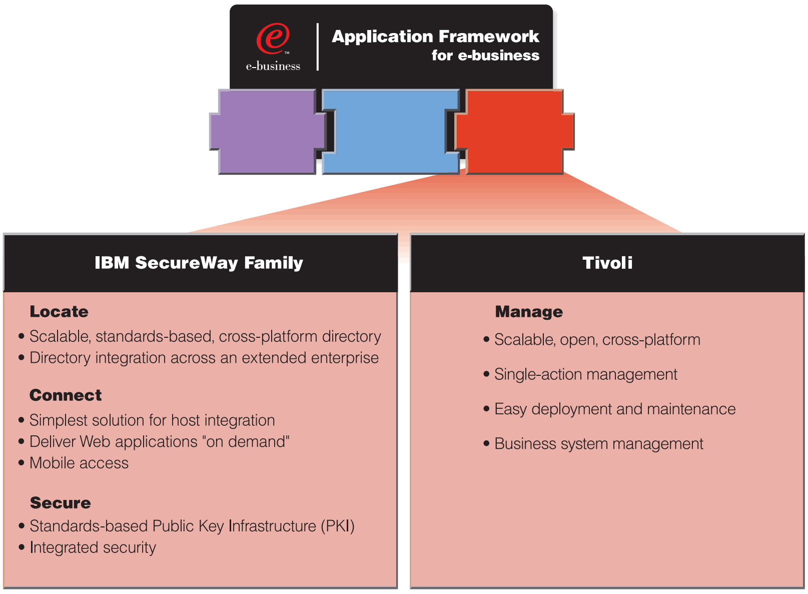
IBM MQSeries	Lotus Domino	IBM WebSphere	DB2 Universal Database
• Connect applications • Speed application deployment and integration • Manage and integrate business process flow across more than 35 application environments	• Rapidly develop and deploy collaborative applications • Advanced capabilities for managing work and information flow • Integration with database, ERP and transaction systems	• Speed transition from publishing to Web-based transactions • For transaction intensive environments • Support for distributed business components	• Best performing database for UNIX and NT • Handles multimedia as well as conventional data • Optimized for Web applications • Delivers enterprise class reliability and availability

Development tools and components

To complement our application servers, we're delivering a rich set of development tools and reusable application components. These tools are easy to use and utilize industry standards for quick development.



IBM VisualAge	Lotus Domino Designer	IBM WebSphere Studio	IBM SanFrancisco and Lotus eSuite
• Helps professional programmers extend existing applications and add new function • Visual programming environment • Supports major languages, platforms and team development	• Customizable templates that speed deployment of collaborative applications • Built-in services like workflow, content management and full-text search • Visual development environment	• Provides integrated tools and workbench for developers using IBM WebSphere • Wizards guide development of servlets and JavaBeans • Site management	• Reusable business components accelerate delivery of applications running on e-business servers



IBM SecureWay Family

Locate
- Scalable, standards-based, cross-platform directory
- Directory integration across an extended enterprise

Connect
- Simplest solution for host integration
- Deliver Web applications "on demand"
- Mobile access

Secure
- Standards-based Public Key Infrastructure (PKI)
- Integrated security

Tivoli

Manage
- Scalable, open, cross-platform
- Single-action management
- Easy deployment and maintenance
- Business system management

Secure network and management software

When you begin to transform your applications to e-business solutions, you need to think about security and management. IBM's SecureWay® family provides the tools necessary for your customers to connect their own customers, suppliers, partners and employees to internal resources while maintaining security for these communications and transactions.

Ready to get started?

The IBM Solution Developer Program provides support and services to commercial software developers worldwide who build e-business solutions using IBM technologies. The program can help you reach broader markets, lower your cost of doing business, and get your products to market faster. Developers can take advantage of no-charge software and tools, hardware discounts and leases, IBM Developer Support Online, cross-platform porting and testing facilities, global marketing opportunities and more. For more information or to join at no charge, visit:

www.developer.ibm.com

Access to services varies by country. Consult the Web site for specific details.

Our worldwide Solution Partnership Centers (SPCs) offer valuable assistance in exploiting the huge e-business opportunity. The SPCs enable you to port and test your code across various IBM and non-IBM platforms in a single visit, at no charge! You'll find all the resources and assistance you need to verify that your applications meet Java technology standards.

SPCs present ongoing, hands-on workshops and technical briefings to keep you apprised of the latest developments in technology. Check the schedule on our Web site for classes in your area about the Application Framework for e-business, and other interesting and useful topics that will get you on the fast path to building e-business solutions.

You'll find the worldwide schedule on the Internet:

www.spc.ibm.com/events

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